

ABSTRACT OF THE INVENTION

The present invention is a novel field effect transistor having a channel region formed from a narrow bandgap semiconductor film formed on an insulating substrate. A gate dielectric layer is formed on the narrow bandgap semiconductor film. A gate electrode is then formed on the gate dielectric. A pair of source/drain regions formed from a wide bandgap semiconductor film or a metal is formed on opposite sides of the gate electrode and adjacent to the low bandgap semiconductor film.